



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,710	05/06/2002	Evgueni Kniazev	KNIAZEV-1 (PCT)	1084
25889	7590	02/12/2004	EXAMINER	
WILLIAM COLLARD COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			WILKINS III, HARRY D	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/019,710	Applicant(s) KNIAZEV, EVGUENI	
	Examiner Harry D Wilkins, III	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12272001</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraki et al (US 6,337,060) in view of Suzuki et al (JP 56-152582).

Hiraki et al teach (see abstract and Example 2) a method of coating including treating diamond particles in a sulfuric acid solution, washing with purified (distilled) water and then plating using a nickel plating solution (i.e.-ultradispersed diamond particle solution) to form a composite coating including dispersed diamond particles.

However, Hiraki et al do not teach treating the diamond particles with a cationically active substance prior to the coating but after the washing with purified water.

Suzuki et al teach (see abstracts) treating diamond powder for dispersion in electroplating of nickel by contacting the diamond with a cationic surface active agent. This process improves adhesion of the diamond particles to the deposited metal layer.

Therefore, it would have been obvious to one of ordinary skill in the art to have further treated the washed diamond particles of Hiraki et al with a cationic surface active agent as taught by Suzuki et al because the cationic surface active agent improves the adhesion of the diamond particles to the deposited metal layer.

Regarding claim 3, Hiraki et al teach (see Example 2) using nickel as the electrolyte suspension.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiraki et al (US 6,337,060) in view of Suzuki et al (JP 56-152582) as applied to claims 1 and 3 above, and further in view of "Cationic Surfactant".

The teachings of Hiraki et al and Suzuki et al are described above.

However, Suzuki et al does not teach that the cationic surface active agent is a tertiary or quaternary ammonium base.

"Cationic Surfactant" discloses (see page 1) the general state of the art of cationic surfactants (i.e.-surface active agents), particularly that quaternary ammonium compounds are the dominant commercial example and that they exhibit biocidal properties.

Therefore, it would have been obvious to one of ordinary skill in the art to have used a quaternary ammonium compound as taught by "Cationic Surfactant" as the cationic surface active agent of Suzuki et al because the quaternary ammonium compounds are conventional cationic surfactants that also exhibit biocidal properties that would aid in making sure that the diamond particles are clean.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-Th 10:00am-8:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw

ROY KING 
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700